THE
Journal of Home Economics
VOL. XI MAY, 1919 No. 5

EDUCATION FOR THE AMERICANIZATION OF THE FOREIGN FAMILY[1]

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I will attempt today no definition of Americanization but instead will state several elements in the process of adjustment, in which for many years I have been interested.

An adequate economic level must first be secured by the efforts of the members of the family group, or by those so related to the members of the group that it may be enjoyed without violation of self-respect or impairment of the spirit of independence.

There must exist also the opportunity to experience and utilize the spiritual and cultural values that lie in the national and family life by cherishing the rich heritage of a long struggle for national independence, and by enjoying the discipline and control or obedience and direction that should be found in the relation of parent and child.

Relations to the new community of which the family has become a part must be so created that there may be reciprocal understanding and respect, that common activities may be developed, and that the common responsibility for the New America that is to play a noble part in the New World Order may be realized.

[1] Abstract of a paper presented at the meeting of the American Home Economics Association in connection with the Division of Superintendence, N. E. A., Chicago, February, 1919.

Clearly, to none of us does Americanization mean persuading families of other national origin to do what Americans have done, or what foreign groups have been encouraged in the past to think not inconsistent with American standards. The practices of the past, we now hope forever dead, have made us blush with shame as we recall them. There has been the brutal lack of hospitality with which we have allowed strangers to enter our gates. We have taken them in, to be sure, and that is better than to have shut them out; but the conditions resulting from our failure to prepare for their arrival fill the reports of our Immigrants' Protective League, of our Immigration Commission, and of other organizations concerned with the care of the distressed and needy in our cities. There has been the inadequate wage; the opportunity for only unskilled gang labor; the crowded home; the assumption, since we enacted our child labor laws, that those mothers whose children were too young to earn would supplement the father's earnings by taking in lodgers, thus overloading the already heavily burdened mother and supplying to the unattached man conditions of living most inadequate to his varied needs and most dangerous to the privacy of the family group. There has been the lack of any adequate provision for the unattended girl whose labor is being coined into goods or transformed into services we enjoy. There has been the assumption that because they were different they were inferior, and there has been a willingness to lose the rich contributions they might make.

Many illustrations of these wastes could be given. One that comes home to me often is the failure to preserve some of the charm and beauty of the names. When Dyonisius and Aestesthaea become Charlie and Nellie, they are more at home as they play in the ugly street in front of the Parthenon barber shop over which their sordid tenement is located; but they are less likely to suggest to us the possibility that they may bring us from that land, from which our great heritage of beauty has come, some echo of the olden art and of the sparkle of sea and sky and noble human form. Casimira and Janina, too, suggest the claims of a race peculiarly gifted and leave us uncomfortable in their poverty and distress, while Cassie and Jennie are common little foreign things that matter little after all.

When I look at the problem of Americanization, it seems to me that it is a problem of groups of persons, none of whom are American in the sense that we and the soil have been long together. *Nous marchons, tous, nec'est-pas?* "We are pilgrims and we are strangers," we cannot

tarry too long. But some have come sooner and some have come later; and all, with the exception of the colored people and the Spanish speaking Americans of the Southwest, have a common memory of having come deliberately, come either from something worse or to something better. None of us "just growed"—at least this was true not very far back. We have been self-selected out of all the nations of the earth. We have not always been invited, nor can we give ourselves the comfortable assurance that we "were just as welcome as if we had been." We have come for different reasons; we have not those in common; we have come at different seasons; but we have been self-determining to this extent, that we have gone from where we were into a far country.

The world has suffered a catastrophic experience. There has been a sense of peril common to us with all the peoples of the world, we believe. The lines have been drawn between a doctrine of control from without, perhaps by force, and that of development from within, self-determination of the peoples or of the individuals. We have had a violent shaking down into our places; and, as the whirlwind passes, we open our eyes to see where we are, whither we would go, and how we can go together. It is because this is a strategic moment, when what we were all doing before can be scrutinized and the way ahead surveyed alike for us all, that I am interested in the problem.

Americanization of the home means for me, then, the establishment of the good home in the good neighborhood, in the well-ordered city, or in the efficiently organized rural community, under a self-directing state government which will see a new significance in the consent of the governed.

What of the home in this effort at coördination! There are the mother and children; older children, boys and girls of elementary school age, children under school age, and infants; there is the husband and father; and often there are the aged parents, the relatives who have been taken in, and the lodgers.

What is the approach to the task of adjustment? From the nature of the task must be deduced the kind of training needed by those undertaking it. Several approaches to the question are possible. There is, first, the body of information that can be obtained from persons who have been in the situation, who have come through the experience and can formulate views based upon their own experiences and those under their immediate observation. Then there are those who come into immediate contact with the various groups for the purpose of rendering services of one kind

or another. There is, too, the question of the development of various agencies upon which the families depend for certain forms of service, into which no personal or intimate feature enters. I have in mind now the retail shops, the local grocery, or the department store.

For the independent, self-sustaining family, the important agents of Americanization would be the press, the stage, the neighborhood center, the governmental agencies, the various administrative divisions like the factory inspection, building and health departments, the courts, and, of course, most of all the school. The school furnishes our richest opportunity in the direction of classes for children, in the organization of classes for women in the school or in the home, and in the organization of activities for women in the neighborhood center. For the family fallen into distress, there is the ministry of the case-work agency, of the visiting housekeeper, or of the usual charity or protective visitor. For the family in which there is sickness there is the opportunity for medical and nursing care.

Our special concern is, of course, with the teacher of home economics in the school, with the extension worker, with the teacher of adult classes of women, and with the visiting housekeeper.

What is our plan of work? What are our points of contact?

I shall consider these in the order in which we have attempted to enter the field: the questions of diet, of clothing, of hygienic practices, of family discipline, of special family festivals, of thrift.

The underlying and special value of our work should first be noticed. We are supposed to appreciate the value of the family as a social institution. We should be the last then to be a party to the introduction of any revolutionary influence into family life.

The first essential is that we cherish the relation between parent and children. We must recognize that the effort to educate the parents through the children may be an additional source of confusion in the already difficult problem. It is for the parents to go with their children. We should never make use of a device that would weaken this relationship until we have tried every other conceivable plan.

A second essential is an appreciation of the difficulties under which the mother labors, and some reasonable estimate of her services to the home. A third is an understanding of the rights of children to adult help of a parental kind. These are so obvious that one may wonder why I take time to review them. But the immigrant parents do not find that they are very obvious to the American community. The public school

means to many foreign parents just the upsetting of the relationship, while the foreign speaking parochial school may keep the standard of filial respect and parental authority.

We find the visiting housekeeper, the home economics teacher of the public school class, the case-worker, reporting that the mothers are lazy, indifferent, shiftless. And as for the treatment of families from which the mother has been removed, the burdens sometimes laid, with the consent of persons supposedly trained in home economics, on the thirteen-year-old girl or even the twelve-year-old boy are incredible to the student coming at the problem from without.

And, then, there must be large patience that comes from applying to women of any group the experiences with women of other groups. The knowledge that the birth-rate goes up as physical well-being and the wage level go down should make a visitor impatient with our wage-scale, not with the mother, when the annual baby appears. The knowledge that pregnancy, confinements, infancies, are to be expected among all poor will remove that exasperation we feel in dealing with the large and increasing families in a foreign neighborhood.

In regard to the matter of giving instruction to foreign women, we have the experience of the Immigrants' Protective League in the organization of classes of adult women, who have been often certain that what they got was not worth their time and strength. Some think the "American diet" is pies and cakes anyhow; and if pastry is the subject of one lesson, they may not return for the next. Here is the place where it is necessary to have a knowledge of their practices in the old country together with a knowledge of their practices here. Often, evidently, they make a very radical change, and not for the better. We may think that what they do is their olden habit, when it may be new and bad, and often we give them no constructive help toward what is better. My own impression is that we suffer from at least two great lacks,—not knowing what they would be prepared to accept and not appreciating the difficulties under which they labor.

Clothing is another field in which we are confronted with confusing results of their American experience.

The neglect of the father is one great weakness in many of our attempts. There will be lines drawn within which the mother has responsibility even if the father has ultimate authority. To find that line and help her within it, while perhaps working with him to widen the area, is our task. This is of especial importance if we have in mind the possibilities of the coöperative movement in retail distribution.

With these and many other evidences of our inadequate preparations for meeting these needs, I drew up the slight bibliography and the brief outline of a course noted in the February Journal for the consideration of the heads of departments in home economics in state universities.

But I should like to put the question, is what we are seeking the Americanization of these groups? Is it not the new-Americanizing of us all?

Take the effect on the careful foreign mother of our lack of protection for young girls and the consequent lowering of standards of manners in public places. The impression made on a Bulgarian young woman by our young women in public places would indicate that we have not considered this. This is a real difficulty with the Italian mother. At the University the Dean of Women can urge that large measure of social freedom with which intellectual freedom alone can be expected; but in the University, on the whole, conditions are safe; everyone knows that the student who mistakes freedom for license will be removed. But the Italian mother has no assurance that the places in which her daughter either works or plays will be kept safe.

And, then, there is the remodelling of the conditions into which these strangers are allowed to come, the question of housing and water supply in the city, of play and school and neighborhood in the small town and in the country. We should have things to say as to the value of the woman's time and strength. To the architect generally her time has so little value that he feels no pressure to put his mind upon the problem of lessening her task. We should consider also the interesting question of the source of supply from which the workers are to be drawn. The question of obtaining persons from the various national groups to prepare for this form of service is one worthy of consideration. The use of the skilled foreign language worker seems to give results far richer than the use of the interpreter or the use of the children and the neighbor.

The Immigrants' Protective League and the Y. W. C. A. have been able in general to obtain foreign-speaking visitors who have become most skilled social workers. But we face, of course, the problem of the wide-spread poverty among these groups. Some agencies have been willing to take workers of a grade lower than would be considered among American visitors; but if we are going to get their best intelligence we must make provision in the way of scholarships for their thorough educational equipment.

THE ACIDITY OF VARIOUS SYRUPS USED IN COOKERY

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The use of various sweetening syrups in cookery during the recent sugar shortage has led to an inquiry concerning the amount of sodium bicarbonate (cooking soda) neccessary to neutralize the acid contained in them, for in many of the batter and dough mixtures advantage may be taken of the carbon dioxide formed as a result of combining certain of the syrups with soda to decrease or eliminate the baking powder or other leavening agent necessary to lighten the product.

In such mixtures there should not be an excess of soda, for, besides the unpleasant taste, untoward results may follow the use of too much alkali. Recent work concerning the effect of alkali on certain of the vitamines, more particularly the antiscorbutic, has shown that some of these are extremely sensitive to dilute alkalies at cooking temperatures, and, although we do not depend upon such foods as breads, cakes, and puddings for our supply of the food accessories, nevertheless, in certain instances these foods may furnish significant amounts, especially in diets containing little fruits and vegetables. The excess of alkali in corn bread has been suggested by Sullivan and Voegtlin[1] as the explanation of the fact that chickens fed cornbread made of cornmeal, milk, and baking soda developed polyneuritis, while those given cornmeal, milk, and sodium chloride remained in good condition. Investigations by Harden and Zilva[2] have shown that the potency of the antiscorbutic material in orange juice is greatly lessened by treatment with dilute alkalies. Furthermore, the wisdom of neutralizing the acid of the gastric juice by an excess of alkali in the food may be questioned, especially in cases of hypoacidity, where digestion is delayed and the antiseptic efficiency of the gastric juice greatly lessened.

An examination of recipes in a number of present-day cook books indicates that there is considerable variation in the amount of cooking soda used with a given quantity of molasses, honey, or other syrups. For example, in one very popular cook book directions are given for using one-half to three teaspoonfuls of soda in certain mixtures calling for one cup of molasses when this is the only source of acid. With sour

[1] Sullivan and Voegtlin: Proceedings Soc. Biol. Chem., *Jour. Biol. Chem.*, 24 (1916), p. xvi.

[2] Harden and Zilva: *The Lancet*, September, 1918.

milk and molasses the amount of soda is necessarily increased, but here also there seems to be no standard proportion, one recipe calling for one and three-fourths teaspoonfuls of soda with one cup of sour milk and one cup of molasses, while another uses the same amount of soda with one-half cup of sour milk and one cup of molasses. Similarly, the amount used with honey in recipes varies, directions calling for one-half to one and one-half teaspoonfuls of soda with one cup of honey. The following inconsistencies were noted in some much used sources.

TABLE 1

Relation of soda to molasses in much used recipes

PRODUCT	MOLASSES	SOUR MILK	SODA	FLAVORING
	cups	*cups*	*tsp.*	
Spice cookies	1	0	1	Spice
Molasses bars	½	0	1	Spice
Ginger snaps	1	0	½	Spice
Gingerbread	1	0	1½	Spice
Gingerbread	1	0	1¾	Spice
Gingerbread	1	½	1¾	Spice
Cake	1	1	1½	Spice
Molasses cookies	1	0	3	Spice

TABLE 2

Relation of soda to honey in much used recipes

PRODUCT	HONEY	SOUR MILK	SODA	FLAVORING
	cups	*cups*	*tsp.*	
Fruit cake	2	0	3	Spice and fruit
Drop cookies	¾	0	½	Spice
Cookies	1	0	1	Spice
Soft cake	1	½	1	Spice
Nut cake	2	0	1½	Spice and fruit
Butter cake	1	0	½ to 1	Spice and fruit
Honey cake	1½	0	1½	Spice

That an excess of soda has been used in many of these recipes is demonstrated by the fact that water extracts of the products give alkaline reactions. In some cases this excess has not been apparent because the spices have quite masked the taste of the soda, while in others we have not learned to discriminate between the taste of soda and that of less familiar substances, for example honey, when these are used in combination.

The different proportions of cooking soda and molasses used in the various recipes may be due to several factors. Many of the recipes have been handed down from preceding generations when the molasses, in all probability, contained larger proportions of acid.

The methods employed in the preparation of molasses were formerly quite different from those in vogue today. After the cane juice had been clarified with milk of lime, it was boiled in open kettles until the sugar began to crystalize, and was then poured into hogsheads having fine perforations in the bottom, which permitted the molasses to separate slowly from the crystals. This gradual filtration caused aeration of the syrup and offered conditions conducive to fermentation and increased acidity. The present method of treating the cane juice, after the addition of lime, is to boil it in large vacuum pans and separate the crystals from the syrup in centrifugal machines. By this means, the possibility of moisture absorption and the subsequent production of acid as the result of bacterial action is practically eliminated.

Not only has the character of the molasses been modified, but the carbonate used in cooking with the molasses has also been changed. Formerly potassium bicarbonate or saleratus was the agent employed to neutralize the acid, whereas today sodium bicarbonate is used almost exclusively. With sodium bicarbonate a larger amount of acid is required to neutralize a given quantity. The following equations, indicating the reactions which take place when potassium bicarbonate and sodium bicarbonate are mixed with cream of tartar in the presence of water, illustrate the point in question.

$$HKCO_3 + HKC_4H_4O_6 \rightarrow K_2C_4H_4O_6 + H_2O + CO_2$$

Mol. wt. 100 188 226 18 44

$$NaHCO_3 + HKC_4H_4O_6 \rightarrow NaKC_4H_4O_6 + H_2O + CO_2$$

Mol. wt. 84 188 210 18 44

One hundred parts of potassium bicarbonate are required to neutralize one hundred and eighty-eight parts of cream of tartar, whereas only eighty-four parts of sodium bicarbonate are needed to neutralize the same amount of cream of tartar. Since in the American household it is customary to measure rather than weigh, it is obvious that housekeepers who are substituting one teaspoonful of sodium bicarbonate for one teaspoonful of potassium bicarbonate are using considerably more of the alkaline material. Therefore, if no allow-

ance is made for the difference in the two salts, sodium bicarbonate and potassium bicarbonate, an excess of the former will be present. However, even if the amounts of soda called for in many of the recipes were translated into terms of saleratus, it is probable that an excess of alkali would be present.

The acid reaction of molasses is due to the presence of small amounts of inorganic acids, namely, glycolic, oxalic, malic, succinic, and tannic, which remain after the lime is added in the process of purification of the cane juice.[3] The amount of acid is comparatively little, since an excess would result in a smaller yield of sucrose through the hydrolytic action of the acid. It is probable, however, that the acid content of different brands of molasses varies slightly, depending somewhat upon the methods of treatment during the purification processes and subsequent handling.

Chemical analyses of honey show that its acidity is due also to organic acids, both volatile and non-volatile. More than half of the former group consists of formic acid, the remainder being made up of valeric, butyric, caproic, and capric acids.[4] The non-volatile acids are lactic, malic, succinic, and oxalic, of which lactic forms the larger part. Acetic acid is present only when honey ferments.

In contrast with the more highly flavored products which contain molasses and honey are those in which corn syrup is used. These in general call for baking powder when a leavening agent is desired. But since corn syrup contains an appreciable amount of acid, the possibility of taking advantage of this in various forms of cookery suggests itself.

In order to know how much sodium bicarbonate should be used with given amounts of molasses, honey, or corn syrup, the acidity of a number of samples of each was determined, for, although it was anticipated that there would be some variation in the acid content of the different brands, in the case of molasses, or of kinds from different sources in the case of honey, it was believed that these would be so slight that some general proportions might be formulated which would meet the needs of the housewife. In the investigation three different grades of molasses were tested: (1) an example[5] of the better grade, of light color and exceedingly mild flavor; (2) one[6] almost black, with a much stronger

[3] Geerlings, H. C. P.: Cane Sugar and its Manufacture. Manchester, 1909.
[4] Root, A. L., and E. R.: The A.B.C. and X.Y.Z. of Bee Culture, Ohio, 1917.
[5] "Lucie" molasses.
[6] "Brer Rabbit" molasses.

flavor; (3) a representative[7] of the poorest grade which could be found in the local retail stores. This was much thicker and darker than either of the others and had a strong bitter flavor.

Weighed portions of each were dissolved in boiled distilled water and decolorized by means of animal charcoal, which had been previously boiled with dilute hydrochloric acid to remove the inorganic salts, and subsequently washed with distilled water until all trace of acid had been removed. The charcoal was removed by filtration and washed until the filtrate was no longer acid to litmus. Filtrate and washings were combined, made up to mark, and the acidity of an aliquot portion determined by means of N/10 sodium hydroxide, phenolphthalein being used as the indicator. Duplicate determinations were made in all cases.

The honey and corn syrup were similarly prepared, excepting that in these it was not necessary to use charcoal, since the solutions were almost colorless. Four varieties of strained honey were tested, three purchased from local stores—one in Wisconsin and two in Iowa—and one from the University Apiary. Only one brand of corn syrup was tested since the results on this indicated that the amount of acid was too little to be of material value in cookery processes.

The amount of cooking soda necessary to neutralize the acid in one cup (8 ounces) of each of the syrups was estimated from the per cent of acid in the given sample, the weight of one teaspoonful of soda being taken as 4.4 grams. Since we were aiming to meet the conditions of the housewife, the soda was measured and weighed as it was taken from the box in which it was purchased, no attempt being made to dry it to constant weight or determine its purity, for previous work in this laboratory has shown that there is but little variation in the alkalinity of different brands of soda, and that the amount of deterioration produced by standing under ordinary conditions is so slight as to be negligible. The results of the investigation are given in tables 3 and 4.

It will be noted that there is a slight variation in the acidity of the different brands of molasses tested, the smallest amount, 0.50 per cent being present in the "Brer Rabbit," and the largest amount, 0.64 per cent, in the "Ginger-cake" brand. The "Lucie" which had the mildest flavor contained 0.52 per cent. Obviously, the amount of cooking soda

[7] "Ginger-cake" molasses.

which should be used with these molasses varies slightly, but, in order that there may be no excess of alkali in products containing molasses, it would seem best to meet the requirements of the least acid, since it is

TABLE 3

*Acidity of molasses and amount of cooking soda necessary to neutralize one cup**

BRAND	EXPERIMENT NUMBER	SPECIFIC GRAVITY	AMOUNT	N/10 NaOH	ACIDITY AS HCl	SODA TO BE USED WITH 1 CUP	
			grams	*cc.*	*per cent*	*grams*	*tsp.*†
Lucie	1	1.38	12.28	18.1	0.53	3.8	¾
	2		11.38	16.6	0.52	3.7	¾
Brer Rabbit	1	1.38	9.27	12.8	0.50	3.6	¾
	2		9.90	13.8	0.50	3.6	¾
Gingercake	1	1.39	13.14	22.6	0.62	4.5	1
	2		11.04	19.9	0.64	4.6	1

* 8 ounces.
† Approximately.

TABLE 4

Acidity of honey and corn syrup and amount of cooking soda necessary to neutralize one cup

MATERIAL	EXPERIMENT NUMBER	SPECIFIC GRAVITY	AMOUNT	N/10 NaOH	ACIDITY AS HCl	SODA TO BE USED WITH 1 CUP	
			grams	*cc.*	*per cent*	*grams*	*tsp.**
Honey U. of W. Apiary	1	1.46	10	1.9	0.06	0.43	$\frac{1}{10}$
	2		20	3.7	0.06	0.43	$\frac{1}{10}$
Com. W	1	1.38	13.20	2.8	0.074	0.53	$\frac{1}{8}$
	2		11.85	2.5	0.076	0.53	$\frac{1}{8}$
Com. I	1	1.40	15.23	3.6	0.08	0.59	$\frac{1}{7}$
	2		12.31	2.8	0.08	0.59	$\frac{1}{7}$
Com. I	1	—†	12.54	1.7	0.053	0.35	$\frac{1}{12}$
	2		11.49	1.5	0.052	0.34	$\frac{1}{12}$
Corn syrup	1	1.38	19.8	1.1	0.019	0.11	$\frac{1}{40}$

* Approximately.
† Crystallized.

not practical to use a different proportion for each brand. Three-fourths of a teaspoonful of soda seems an average amount to use with one cup of molasses. This is somewhat less than that required for the "Gingercake", but the most convenient measurement which will not lead to an

excess, for it is believed that the samples of molasses tested are representative of those in general use.

There was a slight variation in the acidity of the samples of honey tested; but in all cases the per cent of acid (from 0.05 to 0.08) was considerably lower than was anticipated, for the largest amount of soda required to neutralize one cupful of any of the samples was $\frac{1}{7}$ of a teaspoonful. These results are not in accord with those reported by Hunt and Atwater[8] who state that the allowance of soda for one cup very generally ranges from $\frac{1}{4}$ to $\frac{1}{2}$ teaspoonful. The analysis of samples of American and Hawaiian honey given by Leach[9] indicate that there is a very great difference in the acid content of honeys, even from the same source. Alfalfa honey may contain from 0.04 to 0.17 per cent acid (as formic), whereas buckwheat may contain as high as 0.22 per cent of acid. In view of these wide variations it is somewhat difficult for the housewife to know how much soda to use in a given recipe. Certainly she cannot depend upon any standard proportion, unless it be the minimum. Hunt and Atwater suggest that "unless the cook is familiar with her honey, she would do well to mix and bake a small sample of the dough before she decides on the amount of soda to put into the main portion." In view of our results we would suggest that if honey is to be used to any great extent in cookery, it would be well for the baker or housewife to purchase it in quantity and determine its acidity. For the occasional cake, however, the acidity may be quite disregarded and baking powder used when a quick leavening agent is desired. Cakes made with honey and baking powder were in every way satisfactory and were much lighter in color than those made with our honey and the smallest amount of soda recommended in the recipes. Even if the honey should be considerably more acid than that of any of our samples the excess would in no case interfere with the results.

[8] Hunt, C. L., and Atwater, H. W.: U. S. Dept. of Agr., Farmer's Bulletin 653.
[9] Leach, A. E.: Food Inspection and Analysis, New York, 1913, p. 635.

CHANGES IN FOOD VALUE OF VEGETABLES DUE TO COOKING*

MINNA C. DENTON

(*Continued from the April number*)

III. PURPOSE OF THIS INVESTIGATION

This work was undertaken with a view to determining how great are the variations in food value resulting from different methods of household manipulation, in any given process of cooking. The process most frequently studied was that of boiling vegetables. The details considered cover such points as those mentioned on page 3 of the introduction.

IV. METHODS

The methods which were used by the writer in cooking these vegetable samples are described in the tables given below. After cooking, the vegetable was ground or mashed or thinly sliced into metal caps or on to glass plates, and dried at 30° to 80°C. in an oven, or warm air blast, or over a water bath. The amounts of vegetable cooked were ordinarily between 50 and 100 grams, or often much more. This amount was necessary in order that the process should have some resemblance to the ordinary household process; also, in order to secure an approach to homogeneity of samples. After drying, the samples were finely ground for burning in the bomb calorimeter. Often they were formed into pellets by hammering against a metal rod in a metal tube. This was done in order to prevent scattering when the first rush of oxygen enters the bomb; usually, however, this precaution was unnecessary.

The control (uncooked vegetable) was always taken from the same lot as were those that were cooked. As individual specimens, even from a given lot, may often vary considerably among each other in water content and consequently in percentage composition, the control was, whenever possible, a part of the same individual vegetable specimen. In cutting the samples used as controls (uncooked), pains was taken to secure strips running lengthwise through every region of bud or root-stock, so that proportionate amounts of cortex, pith, fibro-vascular bundles, parenchyma, or growing region, would be about the same in control as in other samples. Where it was necessary to take transverse

*A reprint of the full text of Miss Denton's thesis, including 14 pages of tabulated results of the experiments, may be obtained from the JOURNAL office for 25 cents.

sections, these were selected alternately from the various regions, so that each sample might contain representatives or every region.

It is not practicable to give calorific values in terms of weight of cooked vegetables, since this weight varies enormously according to the details of manipulation, and varies, indeed, from moment to moment as the steaming vegetable cools and loses water. I have therefore calculated all values for cooked vegetables upon the basis of raw weight. For example, suppose that 100 grams of raw parsnips weigh 95 grams after cooking (at the moment of manipulation), which dry down to 20 grams; and that this dried parsnip shows a caloric value of 4000 (gram-calories) per gram. Then the raw vegetables with a corresponding value should be assigned 20 per cent of 4000 calories, or 800 gram-calories per gram; which is 363 kilo-calories per pound. If the control, or uncooked parsnip, shows a value of 1000 gram-calories per gram of fresh vegetable (or 454 kilo-calories per pound), then it is evident that this parsnip has lost 20 per cent of its caloric value in the cooking process.

Duplicate samples taken from the same vegetable specimen (or from the same lot if of very small size, as peas) should check within 2 or 3 per cent at farthest. A closer check (0.5 per cent) is usual, but not always possible with raw vegetables, because of the lack of homogeneity of the material. When a high salt content (spinach, some beans) interferes with complete combustion in the calorimeter (by the fusing of salts so as to encase carbon particles and protect them from combustion), the difficulty may sometimes be remedied by spreading the dried powdered sample over a piece of filter paper, whose dry weight and caloric value per gram are known, rolling the whole like a cigarette and bestowing it in the capsule for combustion. Substracting the calories due to the filter paper, one has then left the calories due to the dried vegetable. Usually, however, if the linen thread (instead of the iron wire) be used for igniting, there is no difficulty.

Furthermore, the calorie value of the total cooked sample plus the calorie value of the concentrated cooking water must be approximately equal to the calorie value of an uncooked sample of the same size, as calculated from the control. This check was conducted in a number of instances (though by no means in case of all samples reported) by evaporating the cooking water to a few cc. of sirup, taking it up on a weighed piece of filter paper of known calorific value, drying and burning the whole mass together, or in fractions, as might be necessary. In

those cases where the amount of extract is too great to be concentrated into a volume convenient for such a test, it may be dissolved in a relatively large volume of water (e.g., 100 to 250 cc.), mixed until thoroughly homogeneous, and divided into aliquot portions in any convenient manner. One of these portions is then concentrated, collected, dried, and burned as above. Any suspended particles must be allowed to settle, and then be filtered out of the whole sample before division into aliquots, finally to be dried and burned separately.

Doubtless the question will suggest itself, why should so large a percentage of these determinations have been made with carrots and parsnips? The reasons were that their cheapness (price per pound) and the ease with which they are stored have put them into general use; that they are usually pared and cut before cooking, largely as a matter of convenience to the cook; that their high sugar content makes them sensitive indicators upon which the effect of varying manipulations may be detected.

Total salts were determined by the water-leaching method;[26] ignition was in a muffle furnace.

V. DISCUSSIONS AND CONCLUSIONS

1. The vegetables experimented on, when boiled until tender in excess of water which is thrown away, lose from 15 to 60 per cent of their fuel value. It is a very simple matter to demonstrate these losses ocularly, by cooking pared parsnips, pared carrots, some varieties of peapods, cabbage, onions, etc., finely cut or even coarsely cut, in plenty of water, and then concentrating this water, after pouring off, to small bulk, when it takes the form of a molasses.

The losses are, of course, less, proportionately, when there is less soluble matter to lose. Turnips, cabbage, cauliflower, young carrots, asparagus, onions, spinach, peas, string beans, lose less than do parsnips and mature carrots and Brussels sprouts. Apparently carrots have their carbohydrate more largely in soluble form than do parsnips, for their losses are proportionately heavier, under the same treatment, especially in those cases where their calorie values at all approach those of parsnips.

2. The losses in salts in every case except one (one sample of Spinach) parallel the calorie losses, and usually rather closely. They are,

[26] Official Methods, Association Official Agricultural Chemists, Bureau of Chemistry, Bulletin 107.

as a rule, slightly greater than the calorie losses. The same thing was true of nitrogen losses, in those cases where such determination was made. It is, however, the more soluble rather than the difficultly soluble or insoluble carbohydrates and salts, which are the measure of available food; therefore the food losses exceed rather than run below the percentage here stated.

3. The "blanching" process as ordinarily used in home canning causes losses of 8 to 15 per cent in samples of peas, asparagus, spinach, Brussels sprouts, string beans; and 27 to 33 per cent in samples of parsnips and carrots, if vegetables are peeled and sliced. These peas were blanched for 6 minutes, the string beans and carrots for 5 minutes. The peas might have received a somewhat shorter blanch (2 to 4 minutes), which would reduce their loss somewhat, but not proportionately to the reduction in time of blanching, since the losses are relatively heavier in the earliest moments of the extraction period. String beans, fresh prime stock, are often blanched even longer ($3\frac{1}{2}$ to 6 minutes or more) under trade conditions.

4. The losses in blanching might be somewhat decreased by the use of a salted water. In case of peas the loss decreases from 15 per cent in distilled water to 8 per cent in a 1.5 per cent salt solution; for string beans, from 15 per cent in distilled water to 13 per cent in 0.25 per cent salt solution; or it may be 10 per cent loss on 20 minutes' boiling in 0.4 per cent salt solution. Stronger solutions could well be used when short cooking is given. Here a slight increase in the strength of salt solution has made more difference in the amount extracted than has a fourfold increase in time. In case of longer boiling "until tender," the decreases in fairly comparable samples are: Parsnips, from 31 per cent in tap water to 23 per cent in 0.7 per cent salt solution; white turnips, from 24 per cent to 2 per cent in 1.5 per cent salt solution.

Boiled in a small amount of salted water, or in water which eventually boils down to a small amount, the losses are still smaller, not more than 18 per cent loss, though they went through a 6 minutes' blanch before this long cooking period of several hours at a temperature very near the boiling point. A sample of peas, in which the salted water was entirely taken up, apparently shows less than 1 per cent loss, though they went through a 4 minutes' salt blanch before cooking.

The difference in extractive power between distilled and tap water (Lake Michigan at Chicago) is evident but not great enough to be of practical significance.

5. Cooking losses are, of course, still further decreased by cutting the vegetable into large instead of into small pieces, particularly so if the cut runs parallel with fibro-vascular bundles rather than across them.

6. Steaming, if properly performed, results in losses so small as to be ordinarily quite devoid of significance; this may be the case, even when the temperature is so high and the process so greatly prolonged as to result in serious detriment to flavor, as is possible in high pressure cooking. However, this considerable period of steaming at higher temperatures than the boiling point is likely to extract a considerable amount of soluble material, when this is abundantly present. Again, if the arrangement is such that steam condenses and water washes down over the heated vegetable tissue, the losses may be as great as in any other possible method of treatment. This is true in steamers of the household type as well as in those of institutional type, as any one who may have seen the yellow water under steaming squash or pumpkin can testify.

7. It is obvious that extraction of soluble constituents will depend largely upon length of the period of cooking and upon relative proportions of water and vegetable, especially as the cooking process nears its end and the water boils away more or less rapidly according to the rate at which heat is applied. These two factors are widely variable and exceedingly uncertain, in ordinary household practice, as is also the relative surface exposed, when the vegetable is cut or pared. Add to this the varying degree of extraction possible with different vegetables, owing to the different proportions of readily soluble carbohydrate and salts which they contain, and it will be seen that there is no possible universal factor which can be applied, in dietary calculations, to show losses of fuel or other values of foods, incurred in cooking; or none which can lay claim to the slightest approximation to accuracy upon all occasions.

Such statements as, "Boiling extracts three-fourths of the iron in spinach," or "one-fourth of the salts of potato" or "two-thirds of the sugar of carrots" may fit one instance precisely and yet be far from the truth in another.

Naturally these generalizations do not apply to the "conservation" methods of cooking (steaming, baking, boiling in jackets, utilization of vegetable stocks as soups or sauces) where the loss is reduced to practically nothing at all. One of the best of these economical methods is that in which the edible portion of the vegetable is cut fine and cooked

in a small amount of water or milk which is almost entirely absorbed, and which consequently is served with the vegetable. This cooking may be done directly over the flame, or on a hot plate of asbestos or heavy metal, or on the back of the range, or in a double boiler. The hard, sweet core of young cabbage heads, heated 15 to 30 minutes in this fashion, is a very different product from that which has been long boiled in water. The same thing is true of the outer stalks at the base of a head of cauliflower, which, though often discarded as refuse, apparently may have a higher food value than the fleshy part, and one as easily extracted as that of the fleshy floweret which is usually eaten.

It is also evident that preliminary soaking in cold water, or starting the cooking process in cold instead of in boiling water, will greatly increase cooking losses by prolonging the period of cooking, and by adding the extractive power of the water at lower temperatures to that at boiling temperature.

8. When steamed, all vegetables lose weight, mostly because of the evaporation of water. When they are boiled in an open dish in excess of water, a starchy, or dry, or wilted vegetable, or one with air spaces which can become waterlogged, or one unusually high in crystalloids (salts and sugars, which increase osmotic powers of the tissues), will take up water enough to gain in weight, even though it may have lost considerable amounts of solid matter. A juicy or watery vegetable, or one protected by impermeable cuticle, loses water as well as solids, even when boiled in water, due no doubt to disturbances of colloidal systems within the tissues by the application of heat. The ease with which juice flows from heated meat or fruit (or from heated protoplasmic structures, seen under the microscope) is a matter of common observation, as is the dryness of boiled meat in comparison with properly roasted meat. Again, a sound potato, boiled in its unpierced jacket, almost always loses a little in weight; and often a slight accumulation of water may be perceived underneath the skin, before it has succeeded in escaping. Vegetables cooked in salted water tend to lose weight more strongly than do those cooked in distilled or tap water; the strong solution outside the tissues draws water out of them by osmosis, as does salt on meat, or sugar on berries. Soaking vegetables in cold distilled or tap water, however, swells them but does not cause heavy loss of solids, since the protoplasm is not killed and is able to retain its solutes to considerable degree for a time, at least before bacterial action shall have made itself felt.

It is evident, then, that a comparison of weights before and after cooking can give no information as to the extent of loss of solids. Yet we sometimes hear the commercial canners using this line of argument, in denying that losses take place in blanching. But the circumstance that young peas may show no increase in weight during blanching, does not prove nor indicate that no loss of salts, sugar, or protein of the pea takes place.

9. It may be readily observed in case of a well-packed jar that the processing method used in home canning of vegetables or fruit submerged in a boiling water bath results in the presence of a minimum amount of juice in the jar. In a sample of cabbage the combined weight of vegetables and brine or juice is less than the original weight of raw vegetable. In one of string beans there is an excess of water, due partly to the fact that there were not enough beans on hand to fill the jar, but also to the different method of canning, that of cooking with pressure steam while the jar is completely sealed, thus preventing any escape of liquid.

This small amount of juice is a very different condition from that which sometimes has obtained in commercially canned goods. While due chiefly to differences in closeness of pack, it is also due to the fact that during the two or three hours of processing in a boiling water bath the contents of the partially sealed jar are continually giving off steam to the water bath, even when the bath completely submerges jar and cover, or to the atmosphere above it, in case submersion is incomplete. The constantly escaping stream of air and steam bubbles, over or under the rubber gasket, can readily be observed during the entire period of processing. When the jar is lifted out of the bath, presumably the operator at once makes the seal tight; and, even though the seal should perhaps not chance to continue absolutely tight during the process of cooling, there is more or less vacuum remaining until the jar is opened, in a successful product which "keeps" well. The smaller amount of water or juice in the jar, then, may have only a moderate or even a relatively low extractive value, in spite of the long boiling period. Furthermore, the flavor of this juice is good, and it can be served with the vegetable, which is often not the case with jars or cans containing a large amount of watery juice in metal containers.

We may conclude, then, that the methods for home canning, as practiced in following the directions issued by extension workers in agriculture and home economics, U. S. Dept. of Agriculture, compare very

favorably with other methods of canning as to the effect upon the nutritive value of the product, *provided pains be taken to reduce losses from the blanching process*. This precaution is particularly important in case of young tender peas, carrots, corn, vegetables of the cabbage and onion families, and any vegetables pared and cut or broken into shreds or short lengths before blanching.

It is clearly of the greatest importance, as has been so often demonstrated, that the juice of vegetables escaping into cooking water should be conserved, and methods of making this juice palatable deserve the cook's attention. If onions must be boiled in excess of water to reduce their flavor, at least this water may be concentrated by boiling until it can furnish a suitable flavor for milk or cream soups, or broths or sauces, for vegetable or meat hash or stew, or loaf or croquettes.

A great deal of trouble has been taken to discover the best method of cooking each cut and kind of meat so as to secure optimum results. It is time that vegetable cookery received a larger share of attention from the average woman. The problems which arise in the cooking of each kind of vegetable should be given attention on their own merits. General directions for the cooking of the different classes as underground tubers and root stocks, or green vegetables, are exceedingly useful, yet further details appropriate to each occasion should not be forgotten. Here is one small illustration concerning a point too often overlooked: when some parts of a vegetable are very much tougher and more resistant than others the two should not as a rule be cooked together until the toughest part is "done," for this is likely to destroy the more delicate flavor of the tender parts. We do not expect to cook the tenderloin strip and the tail piece of a porterhouse steak successfully by the same process; or if this is done, the tougher pieces are finely chopped before cooking, and this reduces the extra time needed. Often the same method of procedure can be used with vegetables. It is a clear waste, in times of high prices, to throw away the leaf petioles of kohlrabi or cauliflower, the central core of young cabbage or parsnips; very likely these have as high a soluble carbohydrate value as does the remainder of the vegetable. If grinding or chopping be substituted for a portion of the cooking process, or if these more resistant parts can be given a separate long slow cooking in fireless cooker or double boiler, the palatability of the combination may be enhanced, and its nutrients conserved.

One word remains to be said, from the standpoint of modern theories of nutrition. Indications are not lacking that we may at last come to

believe that spring "rheumatism" and pallor and skin disturbance; those cases of pyorrhea which are akin to what has sometimes been called scurvy, low resistance to many winter infections, and that common evil, constipation, can conceivably be favorably affected by such an increase in the diet of these vegetable salts, acids (and possibly "vitamines"), as occurs when we change from a winter diet of canned and heavily extracted vegetables to a spring diet of fresh or lightly cooked ones.[27] At least it seems worthwhile to take measures to prevent our foods from being depleted of these vegetable extracts which should no more be thrown away than should the drippings of fat and juice which cook out of meat. Yet many a woman, who would be shocked at the idea of throwing away a meat broth, does not hesitate to discard a much more highly nutritious vegetable broth.

Since the above words were written a study has appeared (Jour. Amer. Med. Assn., March 30, 1918) which exactly illustrates the point in view. Dr. Hess, a notable authority on scurvy, rickets, and other phases of pediatrics, considers it likely that the rickets, so commonly occurring among negroes in New York City, may have some relation to the lack of fresh vegetables and fruits in the diet. He finds that these emigrants from the West Indies never have the disease while living where the diet contains large amounts of fresh vegetables and fruits.

SUMMARY

1. Boiled vegetables may lose as low as 15 per cent or as high as 60 per cent of their fuel value, according to the method of manipulation. Those vegetables which are cooked within their own heavy, intact jackets, such as unpeeled Irish potatoes and beets, will of course lose much less even than this minimum. The extent of the loss depends upon the amount of soluble carbohydrate and protein present in the vegetable tissues, as well as upon the manipulation.

2. Losses in salts and nitrogen often, if not always, slightly exceed the fuel or caloric losses.

3. Blanching for 5 or 6 minutes causes losses of 8 to 15 per cent in salts or fuel value. Peeled and sliced vegetables lose twice as much.

4. Salting the water (1.5 per cent solution, or about 1 tablespoon to the quart) decreases the losses in fuel value due to boiling.

[27] It is of great interest and pleasure to the first holder of the Ellen H. Richards Fellowship, at the University of Chicago, who writes these lines, to learn that this doctrine was vigorously propagated by that wise and far-seeing woman.

5. Cutting the vegetable crosswise instead of lengthwise, or into small instead of large pieces, increases the losses.

6. Steaming usually cuts the caloric losses down almost to zero; also the salt losses, except in case of leafy tissues, such as cabbage or spinach, which expose a very large amount of surface to the action of the condensing vapor. However, if conditions within the steamer are such that water washes down over the vegetable mass, steaming may cause very large losses. Particularly is this the case with pressure steamers.

7. The two factors most potent in causing variations in cooking losses are varying lengths of time of cooking, and varying amounts of water used in proportion to mass of vegetables to be cooked.

8. Steamed vegetables always lose in weight. Boiled vegetables may gain in weight because their intercellular spaces take up water at the same time that they are losing heavily in mineral salts and soluble carbohydrates and proteins.

9. Home canning often results in a maximum amount of vegetables and a minimum amount of watery juice in the jar, partly because of close packing and partly because liquid is driven off during the period of processing with the seal only partially made. This relatively small amount of juice in the jar is a great advantage from the standpoint of true nutritive economy,—whatever may be its effect upon ease of sterilization of the vegetable mass.

ADDENDUM

The author takes pleasure in acknowledging her indebtedness to Dean Marion Talbot, Head of the Department of Household Administration; to Major A. J. Carlson, and to Dr. A. B. Luckhardt, of the Department of Physiology; and to Dr. F. C. Koch, of the Department of Physiological Chemistry, University of Chicago; for advice, supervision, and many favors in the way of laboratory facilities.

THE BEGINNINGS OF A PENNY PORTION LUNCH

GEORGE B. MASSLICH

Principal, Wells School, Chicago

Running across a street filled with automobiles, trucks, and cars, at recess time, to the dirty little "school store" with its gum and candy of the cheapest grade, or staying in safety within the school grounds to buy of one's fellow pupil's good candy, clean in its manufacture and handling,—this choice was the beginning of the Wells School lunch.

One hundred penny pieces of candy cost the dealer sixty or seventy cents. The pupil's store, with no overhead expenses, began to accumulate a capital which in true coöperative fashion was invested in the business, so that within a few days a further choice was possible. A glass of skim milk with a cooky, served by a pupil with clean hands and wearing a clean white apron, argued with the stick of candy or the four marshmallows. This was, of course, before the war and at pre-war prices; the argument now is between half a glass of skim milk and two marshmallows.

There were no secrets between buyer and seller, for the buyer of today, if he or she were above the third grade, might be the seller of tomorrow. The milk with the cooky sold at cost, but the candy profits paid for the glasses, for the paper napkins, and for the aprons and towels made and hemmed in the home economics classes. Moderate sales of candy sufficed to pay expenses and add to the equipment, so that we felt justified in continuing it as the store prospered and we undertook a noon business with cookies, crackers, fruit, and "home cooked" food. Although the same freedom of choice was allowed as at first, the sales of candy increased only slightly.

As the situation became more and more complex improvements were made, not a few through suggestions by the pupil workers themselves. Aluminum checks good for a penny each were sold in advance and dropped into the box at each section of the counter. This plan served as a test of the accuracy (and honesty) of the cashier, enabled one to count portions for the cost schedule, and made it unnecessary for those who served the food to make change or handle money. A corps of servers and clerks involved a manager, and the use of many dishes made it seem wise, even though other help was voluntary, to pay someone for the drudgery of washing them. An account was opened at the

local bank, and various upper grade pupils took turns counting the day's receipts, making out the deposit slips, and sending the money to the bank.

One of the duties of the manager for the day has been to count the cost of the items in each "dish" and compare the cost and the selling price—the aim being to have neither a profit nor a loss on the whole day's business, exclusive of the candy and cookies which show a fairly constant profit.

A word as to the honesty mentioned above. Once in a long while we have found that several of the servers have helped themselves to a cooky or two. These minor epidemics all seem to have arisen when a pupil, tempted to take something, has sought to justify his act on the ground that he was a helper, and then has communicated his plea to others with him. The sense of partial ownership appeals to all the children involved in the enterprise, and the argument, whether ethical or not, that taking from the lunch room is taking from each other and from themselves and is therefore very bad, has been sufficient to stop the practice.

From the first, a certain amount of supervision and help has been given by the principal or by a teacher. Food has been bought on monthly account and paid for by check, the pupils merely verifying the bills by the delivery slips. After two years of pupil management we asked the Board of Education for three dollars a week to pay for dish washing and for help in cooking. This was granted and the amount was increased later. At the beginning of the fourth year and since that time—during the past year and a half—we have received from the Board, for help, a sum equal to a third or a half of the total receipts. The major part has been used to pay the part time salary of a home economics teacher and the minor part for common labor. Pupils, both boys and girls, continue to assist under the direction of this teacher. The task of helping (considered by the child a privilege) comes to each pupil about once in six weeks, except that to a special group of girls in the fifth grade who are over age it comes somewhat oftener. Food products from the regular cooking class are used at times in the school lunch, and, altogether, the services of the children are more in demand than ever before.

Including the sales of candy, crackers, and cookies, over thirteen hundred penny portions are sold every day. Each sale is for a check costing one cent, and, from a typical menu of cocoa, skim milk, soup,

beef stew, macaroni, baked beans, chocolate pudding, prunes, and sandwiches, one may select a meal of substance and variety for five or six cents. It is amazing that children whose diet at home is devoid of variety and who insist that they do not like this or that—particularly cream soups and vegetables—have, of their own choice, bought and eaten nearly a hundred different dishes at the lunch room. We try to limit the child to one penny portion of each kind; we talk about variety and value of food in a simple way in the class room, and at times we advertise a new food, as, for example, when it was announced that a dish much used by American Indians—succotash—would be served; but the final choice rests with the child himself.

We have, I believe, demonstrated that it is possible, by a combination of store and lunch room, to start without capital; that good candy is the best argument against poor candy; that good food is an argument against all candy; and that interested coöperation is worth more than equipment.

Further development in a number of directions is needed. No limitations of time, space, or money can excuse failure to provide children with facilities for washing their hands and for hanging up their wraps, or time to eat leisurely. The art of eating as a family group, using the accepted table ware and observing approved manners, is not only conducive to health but may become a social asset. The conception of a school lunch as a soup kitchen, pure and simple, ignores the fact that it is part of an educational institution and should not smack of the orphan asylum. Eight or ten children seated at a table with a teacher or an older child and served by one of the group may have a delightful time together without realizing how much they are learning.

As the school lunch is more than a restaurant so the director should be more than a practical cook. The thought underlying calories, proteins, and balanced rations can be brought into the comprehension of young people. Taking inventories, counting costs, planning menus, discussing recipes, directing the work of others—these means of education constitute a powerful argument for putting every school lunch in charge of a home economics teacher, and for unifying, gradually, the lunch and the teaching of home economics; but that is not easy.

The problem of feeding the child who is too poor to buy can be solved when checks are used by having his teacher give them to him secretly. His mates have no idea that he has not paid for them. A more difficult problem is that of inducing those who most need the lunch to patronize

it. Upper grade pupils as a rule have several times as many pennies to spend as have children in the primary grades, and naturally buy with more judgment. Many children do not have even a penny, and others, because they are shy, or for some other reason, do not come near the lunch room. A good plan with the smaller children is to lead the whole class during school time into the lunch room, provide each one with a "free check", and have them go through the regular routine of getting a cup of cocoa. After all are seated a short period of story telling on the part of the teacher will be enough to disguise the purpose of the visit.

We have been careful never to give the impression that the lunch is a charity affair for poor children. We supply the day nursery, which is a department of the school, with food; and nearly every teacher regularly supplements her package lunch with soup and other hot dishes, simply because the quality is good. We are conscious of our limitations and of our failures; but we find a grain of comfort when the pupil helpers ask if they may not take some soup to a sick neighbor, or when a boy of twelve, left to cook for his father and little brothers and sisters while his mother is in the hospital, asks the teacher what he might safely attempt to cook at home, or when a couple of girls after school go into a home where the mother is ill, wash and dress the little children, get supper, and straighten up the house. There is a human side even to the school lunch.

ANNEXING MULBERRY BEND TO THE U. S. A.

It is in that part of the city, of which Jacob Riis often spoke and wrote, that the Educational Nursing Bureau of the Association for Improving the Condition of the Poor decided to attempt some public health work. Prenatal nurses began the work by a house-to-house canvass for the purpose of giving to expectant mothers such instruction as should insure a normal, healthy baby, and a well, strong mother.

The question is often asked, "How do you gain access to the home? Do you find a ready welcome? Are the mothers responsive?"

When we remember that 95 per cent of these mothers are foreign born, and speak practically no English; that prenatal nursing is a recent branch of public health nursing; that the medical care is given entirely by midwives, who assure the mothers that the nurse is not necessary—we are not surprised on our first visit to find a doubtful, wondering mother.

During the interval between visits the mother tells a neighbor of our visit. Perhaps this mother has just returned from convalescing at our Caroline Rest, or her baby, who had a disfiguring hare-lip, is now as pretty as any baby in the block. So she establishes for us our future good relations with our patient.

Along with the nurse has worked the dietitian in any family where the poor condition of the children has seemed to be due to improper feeding. Malnutrition clinics were organized for the under-nourished children of these homes. The first clinic was started at a Board of Health Milk Station. Later it was transferred to a school building. Three other clinics have been opened, two in schools and one in a diet kitchen. There are enrolled today at these four clinics 381 children, of whom 220 (57 per cent) are underweight. In all, 51 clinics have been held, and 652 home visits have been made by the dietitians.

The main idea running through the clinic and home work has been to get a plan which would give both the mother, with the folks in the home, and the school child the same opportunity to learn together some lessons in better living, with especial emphasis on the food question. To teach the mother alone is not enough, because, if you get the mother to cook the food as instructed, very often the children refuse to eat it because it does not mean anything to them. Again, it is not enough to interest the child without in some way bringing in the mother; a too frequent result of that is to arouse an antagonism between the child and his mother. So we have tried to run the two lines of instruction as nearly parallel as possible. For example: the weight chart with the child's name on it so that everyone knows whose chart it is, the colored stars as rewards for the establishment of better food habits, give the child a feeling that he has a certain responsibility in the matter, and also urge him on by creating the spirit of competition between him and the other children. On the other hand, the frequent visits to the home tend to give the mother the idea that you are interested in her personally, and that if her child is to do as well as the child next door she must contribute her part by giving the child the opportunity of having the things which will improve him.

We hear so much to-day as to the need of Americanization of our foreign folks. Is there any better promise of Americanization than in the daily, patient teaching of these mothers and children in the essentials of clean, healthy living? At least it is along this line that we believe we can best do our part in Americanization work.—*Bagdad on the Subway*, A. I. C. P.

FOR THE HOMEMAKER

THE CAVE OF PRECIOUS THINGS

A Short Play for Children

ALICE WANGENHEIM

Adapted by K. W. Hinks

Characters:

Jane.
Bobbie.
Ellen, their nurse.
Captain of the Forty Ex-Thieves.
A Little Belgian Girl.
A Soldier Boy.
A Sailor Boy.
A Little Rich Boy.
Members of the Band of Ex-Thieves.

Scene: Jane and Bobbie's nursery; five in the afternoon. The setting is simple: a shallow stage with no break in the background except a tall cabinet covered with rose-colored curtains, in the center; and a low table across which Jane and Bobbie in low chairs sit facing each other. Jane is reading from a big book.

Jane (*Reading slowly and somewhat laboriously*): "Then the Queen of the Sea made a great fire under the golden bowl, and in it she threw perfumes and aloes wood and stirred it; whereat a great steam and bubbling uprose, and there came forth a huge Djinn whose head reached the vaulted roof——"

Bobbie (*As Ellen appears in the doorway with a tea-tray*): Hoor-ray! Tea-time.

Jane (*Paying no attention, as Ellen sets down the tray and then stands listening, arms akimbo*): "'What is it thou wouldst know, damsel'? quoth he——"

Ellen: "What is it thou wouldst know" indeed! It would be that much better to my way of thinking, Miss Jane, if you'd leave reading

about people as don't talk like anybody ever heard, and eat your bread and butter!

Jane (*Hurt*): It's the Arabian Nights, Ellen!

Ellen goes out. The children start eating, Bobbie leaving the crusts of bread. Bobbie pulls a dollar bill out of his pocket.

Bobbie (*Calling*): Ellen! (*Ellen re-enters.*)

Bobbie (*Waving the bill*): Look what Uncle Tom gave me! I'm going to the movies tonight.

Jane: And I'm going too.

Ellen: Now, Master Bobbie, you're not to go to the show tonight, you went last night. You know that you should save your money. And see those crusts of bread you have left. You won't have anything to eat at all if you keep on this way.

Jane (*Alarmed*): Ellen—are we—are we poor?

Ellen: Bless you, no—but the Government asks you to save.

Bobbie: I don't care, I'm going to the movie tonight.

Jane (*Eating only the frosting off her cake*): And we're going to get ice cream and candy afterwards, too. You can't make us save. You stingy old thing.

Bobbie: I guess I can spend my money if I want to (*puts four spoonfuls of sugar into his chocolate, tastes it, makes a face, and pushes the cup back*).

Ellen leaves the room. The children sullenly continue with their meal, kicking their shoes against the chair and marring the furniture.

Jane (*Messing her chocolate around in an aimless manner*): The mean, stingy old thing.

Bobbie (*Watching her listlessly*): Why don't you be the Queen of the Sea and make a spell.

Jane (*At once becoming interested*): How?

Bobbie: Here, give me the big spoon to stir with. We might as well have some fun.

The light in the room suddenly grows dim. Voices in a sort of sing song are heard outside. The rose-colored curtains slide back to reveal a high, massive door behind them.

Bobbie: Why *look* at the curtains!

Jane: And the door!

Bobbie: It's where our play-cabinet was!

They leave the table and, hand in hand, stand before the door. Sing song voices come from behind it.

Bobbie: What can it be?

Jane: Maybe it's the door to the cave of the Forty Thieves!

Bobbie: Do you suppose it will open?

Jane: Let's try!

Both: Open, Sesame!

The door slowly opens wide, revealing the full depth of the stage within. At the same time the sides (which formed the old back) are drawn into the wings, leaving not even the little table as trace of the first part. The stage, which has become somewhat dark in the last few minutes is flooded with light, revealing the scene first observed through the open door.

It is a great cavern, against whose dark walls can be seen barrels of flour, sacks of grain, bags of sugar, and piles of gold and silver money. There are several large record books on a chest at one side. Fifteen or twenty little men in Oriental garb, very brilliant as to sashes, bloomers, and head-pieces, are engaged in hauling some heavy chests into the cave from another entrance (left). Others are moving bags and barrels out of the cave. A number of them are pulling rhythmically on the ropes in the manner of sailors, while chanting a sort of "heave-ho" at regular intervals—the noise which has been heard before:

They do not notice Jane and Bobbie, who stand hand in hand, looking at them.

Bobbie: Please, sirs—who are you?

The little men stop their occupations and stare in a surprised but friendly manner at the two children.

The Captain: What have we here? How did *you* get in?

Jane: We just came. Are you the Forty Thieves?

Capt.: We are the reformed Forty Thieves—and quite reformed too! You see we weren't *really* killed by the oil—they put that in to make a good ending. Now we are the Collectors and Keepers of the Savings. Meet my men, won't you? Come out, my jolly men. (*To the children:*) You are Bobbie and Jane, aren't you?

Jane: How'd you know?

Captain: Oh, I'm getting to know people pretty well these days. Yes, and I know more about you.

Bobbie (*Surprised*)*:* What—?

Captain: I don't wonder that you're surprised. You see all those black books over there. We keep a record of everybody in them. So we know what is happening. That's our business.

Bobbie: But—but what kind of a record?

Jane: Yes, what kind of a record? May we see ours?

Two little men have brought one of the big books to the Captain. He thumbs through several pages.

Captain (Reading): Bobbie Davis. Expense record for the first week in May. Food wasted at the table, value one dollar; lost sweater, two dollars; torn coat, one dollar and a half; picture shows, 50 cents; ice cream, 60 cents; candy, 30 cents; Saving Stamps—what? Nothing.

Jane: Oh, Captain, please don't read mine.

The Captain closes the book.

Bobbie (Thoughtfully): Why do you keep that record?

The Captain sits on one of the chests with the children at his feet. In the back ground the Ex-Thieves go on hauling chests, bags, and barrels in and out while they continue their chant in a low tone.

Captain: I'll tell you why. Children who are wasteful and don't save these days should have things explained to them. Should I begin at the beginning?

Bobbie: Yes.

Jane: At the very beginning.

Captain: Well, before there was a war, there was enough for everybody in most countries. People ate what they liked and wore what they chose because there was lots for everybody else. Then came the war. The farmers in the countries at war, who had been raising the grains and other things, all went off to fight—but everybody had to eat just the same. The war spread and spread and pretty soon fields and orchards were turned into battle fields and even when they weren't, it grew harder and harder to raise enough food, or to send it from one place to another. So pretty soon there wasn't enough bread for those the soldiers had left behind, or sugar for the people's porridge, or milk for the babies, or clothing enough for anybody. Pretty soon people in this country began to see that there was not enough to go around, so almost everybody was as careful as could be of everything, and sent away all that could be carried. Then our soldiers went away to war, and we had to send things to them too.

Now the war is over, Uncle Sam must still take care of his men and pay the bills and for a little while help other countries too. But how can we do this if the men and women, and boys and girls use up all their money for themselves, and buy things they do not need, and forget to be careful of the food and clothes they have? The President and the Chief Grown-ups are showing all the children how they can really help Uncle Sam.

An Ex-Thief (*In a mysterious voice, tapping the Captain on the arm*): There's a messenger outside, asking for some things.

Captain: Bring him in.

A soldier enters and salutes.

Soldier: Sir, the Army in France must have supplies for the Commissary.

Captain: All ready for you. I think the people know how badly you need them.

Exit soldier with little men carrying barrels and bags.

Ex-Thief (*To the Captain*): Another messenger, your Captainship!

Enter a sailor who salutes.

Sailor: Sir, the Navy needs money for the men on her ships.

Captain: She shall have it. It is ready. (Pointing to a chest.)

Exit sailor boy. The Ex-Thieves haul out chests as before.

Bobbie: My! I like him. I'd give him anything.

A plump little boy in a Little Lord Fauntleroy suit enters.

Little Boy (*To Captain*): Are you the Collector and Keeper of the Savings?

Captain: That's my name. And who may you be?

Boy (*Drawing himself up*): I'm the richest boy in our part of town; I get everything I want. I'm going to take my savings and spend them.

He goes over to the money and starts counting it out.

Bobbie and Jane: Oh, don't let him do it.

Captain (*Sorrowfully turning to an Ex-Thief*): Any more outside?

Ex-Thief: One more, Captain.

A very thin, forlorn looking Belgian Girl enters and goes up to the Captain.

The Girl: Please sir, will you help my daddy rebuild our home?

Captain: I'm sorry little girl, but I can't unless the American boys and girls save (*pointing to the Rich Boy who goes out counting his money*). *The little girl begins to cry.*

Jane: Poor little thing.

Bobbie: I'm going to help her.

Jane (*to the little girl*): We are Jane and Bobbie, and we are so sorry we forgot about you, and didn't save our money. We'll go right home and try to find the things you need, and we'll be careful of our clothes and food and everything else, so the money it would take to buy more can be sent to you instead.

Exit little girl, happy.

Captain: No more messengers. Time to shut up the Cave for the night. (*To the children*) And before you go, would you like a suit of

armor or a pet tiger to take home? Or is there anything else you'd like?

Both children: No indeed—we have everything we need.

Captain: Remember that, and you won't go wrong! Good-bye! Shall we open the door for you?

Several of the Ex-Thieves, in a low, sepulchral voice, call: "Open Sesame." The stage grows dark. When it is light again, the scene is as it was at the beginning of the play. The Children are sitting once more, now in semi-darkness, at the little table.

Ellen enters with a light.

Ellen: Bless the children! Have you gone to sleep in the dark? Wake up! It's most supper time.

Jane: Supper time? Why—but we've been away.

Ellen: Away is it, this time? I thought it was the "Arabian Nights."

Bobbie: To the cave of the Forty Ex-Thieves—only they are Collectors and Keepers of the Savings now. Oh, it was just splendid! And we are going to save now!

Jane: Oh, Ellen, we must help that little Belgian girl.

Bobbie: And the soldiers and sailors, too!

The children run out. Ellen looks after them in astonishment, hands upraised.

Ellen (Puzzled): What's got into the lambs?

THE SWISS WASH KITCHEN

ELLEN HOWARD WILSON

The wash kitchen in Zurich belongs, not to the separate apartment, but to the apartment house. Practically all the people in this city live in apartments which they call wohnungs. These dwellings are very complete, often containing a large central hall. An ordinary house will contain three or four dwellings, one occupying each floor.

The cellar of the Zurich house is divided into a number of small rooms, with one large room, the wash kitchen, furnished with a stove and either with or without stationary tubs and ironing tables. Each dwelling

has its own coal cellar, provided with lock and key; it may also have a room for vegetables.

The wash-room is the general property of the apartments and its use is shared in different ways. One plan is for each apartment to have the use of the room for a week in turn. Let us suppose that Mrs. Doctor lives on the first floor; then, if there are four apartments, Mrs. Doctor will have the wash kitchen the first week of the month. She hires a washwoman, preferably a widow, and she or her maid must be up betimes to arrange for the woman when the important day arrives. The coal cellar belonging to the first floor is unlocked, displaying its wealth of coal and wood. The kindling wood is in tiny bundles, each stick being about eight inches long by less than an inch thick. Because it is carefully prepared it will kindle a fire better than two or three times its bulk carelessly cut. The washerwoman, after she has started her fire, takes her first breakfast of coffee, sausage, and bread, eating either in the sunny kitchen on the first floor or down in the wash kitchen.

Breakfast dispatched, she goes to work. She has before her the larger pieces of linen and all the washable clothing used by the family during the month except such few small pieces as Mrs. Doctor and her maid have attended to themselves. If Mrs. Doctor is economical, and that goes without saying if she is Swiss, small articles like handkerchiefs and collars will have been laundered each week. Foreigners and very wealthy Zurichers may send some things to the nearby laundry.

The strong-armed woman will wash everything in a day or a day and a half; but then comes the drying. If the sun withholds its rays, as he very generally does when the summer is over, the roof drying-room is of no avail, and the drying must be done in the two kitchens. It is for this reason that our lady needs her wash kitchen for the week, although the work may be over, sometimes, in three days.

The Swiss family saves fuel by the use of the wash kitchen, as well as in the heating of apartments, and in the use of bakers' ovens. If Mrs. Doctor had had her own laundry, and had employed a laundress each week, she would have used two or three times as much fuel, to say nothing of wages.

It is not a bad arrangement, once you are used to it, but woe be to the housekeeper who forgets to have ready the supply of kindling, or the beer and cheese for the laundress's second breakfast. If she forgets these, she must hurry to the Consum Verein, and her maid must bring back the heavy articles.

THE CHATFIELD LAUNDRY—AFTER SIX YEARS

MARY L. BULL

State Home Economics Extension Worker, Minnesota

The Chatfield coöperative laundry in the first year or two of its existence was watched with great interest, doubtful ones being sure that it could not be a success. Six years of successful operation have proved that such a laundry is not only possible, but that, if not an absolute necessity to the community, it is one of the helps which will make for the much needed conservation of woman power.

The real beginning of the laundry was at a meeting of the County Life Commission held at the University Farm, St. Paul, Minn., December 11, 1908, when the possibility and practicability of organizing coöperative laundries in connection with already established coöperative creameries was discussed. The idea originated in the mind of Mr. Clarence Wedge of Albert Lea, then editor of the Orchard and Garden Department of *The Farmer*, and it later received considerable notice through the press.

Some farmers of Chatfield, Fillmore County, became interested in the project and brought it before two well established organizations, the Farmers Club and the Coöperative Creamery Association, where it was discussed and brought to the notice of the town as well as the rural communities. In 1912, the coöperative laundry of Chatfield was organized—the first in the state as well as the first of its kind in the United States. The coöperative creamery which made such a laundry possible had been established in 1889 and was such a success that the stockholders had realized in dividends $2.70 on every $1.00 invested at the time of organization. At an annual meeting of the stockholders it was decided to pass their dividends and allow them to accumulate. In 1912, when ways and means of starting a laundry were discussed, the accumulated dividends amounted to $2,000. This sum they voted to use in building an addition to the creamery building which could be rented to the laundry corporation.

The laundry corporation was made a separate corporation because many town people, who were not stockholders in the creamery, were interested and became stockholders in the laundry. The object of the laundry enterprise was to be of service to the patrons, not to realize a profit on investment. Shares were sold at $5.00, and stockholders invested from five to twenty-five dollars. A stockholder has one vote

whether he holds one or more shares. In 1914, there were 224 stockholders. The officers of the laundry association were the same as those of the creamery association and this policy still continues.

The laundry room is 30 x 70 feet, and has windows on both sides and one end. The original equipment consisted of two 36 x 62 No. 11 plain three-apartment wood washers; one 32 x 30 No. 2 plain wood washer; one 100-inch 5 roll ironer, ribbon feed, automatic stop, belt driver; one 26-inch S. C. extractor; one 60 gallon iron soaptank; one 25 gallon H. R. starch cooker; one one-section dry room; three plain all metal trucks; three vertical steam coils and fan; one 11, 8 x 18 combined ironer, tilt boards, shirt board with clamps; one collar board; one Litchfield gas burner; one No. 5 shoe band ironer; one hot tube shaper; one barrel frame starcher; one No. 24 shaw collar shaper; and one gas machine. This equipment is sufficient to turn out $400 worth of work per week. One form ironer has been added to the equipment, since the man in charge at present felt that too much time was being spent in ironing the bodies of shirts by hand, and that the body ironer would be an economical investment.

There are employed in the laundry one superintendent, one forewoman, five or six girls, and a delivery man.

At first a rate of five cents per pound was charged for rough dried family work that came from the county. Town work had ten per cent added to cover collection and delivery. At present the rate is six cents a pound for rough dried family work from the county and ten per cent added for town work.

Country work is brought to and taken from the laundry on days when cream is brought to the creamery. If brought on Monday it may be taken away on Wednesday, if brought on Tuesday, it is ready on Thursday. In the rough dry family wash all flat work—sheets, pillow slips, bed spreads, towels, table linen, handkerchiefs, and plain curtains not requiring stretching—is put through the mangle. For unstarched articles requiring hand ironing an extra charge of from two to six cents a piece is charged. Starched articles come on a separate list. These prices are necessarily irregular because of the size, style, and trimming.

One engine furnishes the heat and power for both the creamery and the laundry, the work of attending to the firing being divided between the laundry and the creamery man.

A recent survey of Chatfield Laundry activities shows that the average number of patrons for 1918 (to October 1) was 204, of which 38½ per

cent is from the country, 39 per cent from town, and 22½ per cent from adjoining towns. The amount of business done in 1916 was $6556.98, an average per month of $546.41; in 1917 it was $6750.85, an average per month of $562.57; in the nine months of 1918, the average per month was $573.46, showing a slight increase from year to year.

In 1917, the balance sheets show that 66½ per cent of the year's expenses were paid out for help and 29½ per cent for other things, as rent, power, soap, starch, gasoline, twine, paper, and repairs, leaving a reserve fund of 4 per cent or $277.74. It is interesting to note that the number of patrons is practically the same summer and winter, that during the winter the greater proportion comes from the town and in the summer the proportion is greater from the farm.

The survey however did not show any perceptible increase in rural patronage since the war. We believe that, if women are doing outside work as they are in so many places, some of the laborious work of the house should be taken from their shoulders. In a house to house canvass most house wives who were patrons of the laundry expressed the opinion that it was a most helpful institution and that they felt that sending laundry out was in their case an economical proposition. A few felt that laundries in general were hard on clothing, but others who had patronized the Chatfield Laundry since it was established said that they did not find it true in this one.

One little woman, old at 35, said with great pride, that she did all her work, washing, ironing, caring for the house in general, and sewing, as well as helping with the milking or doing it alone, and in busy times helping with the field work. When asked if she did not think it wise to save her strength and have some time to enjoy life, her remark was that she could not afford it. Later investigation showed that the family were well-to-do- farmers.

One great factor which is needed in an enterprise of this kind is perfect coöperation. Chatfield seems to have found the keynote. Two women, when asked which they would prefer, a home laundry, fully equipped with power washer, wringer, machine ironer, and hot and cold water, or a good coöperative laundry, replied, without a moment's hesitation, the coöperative laundry.

A laundry, coöperative or otherwise, must have someone in charge who understands the business and who believes it to be a business worthy of his best efforts. Again Chatfield seems to have secured the right person for the Superintendent of the Coöperative Laundry.

EDITORIAL

Belgian Society for the Education of the Family. The following letter, received by Dr. Langworthy, may be a suggestion toward international coöperation in home economics.

The writer, M. Paul de Vuyst, an honorary member of the American Home Economics Association, and Chief Director of Agriculture in Belgium, has held for years a high reputation as a teacher of agriculture and an authority on agricultural education and agricultural employment. He was influential in establishing the Domestic Agricultural Schools of Belgium, that give not only technical instruction but also the fundamentals of a general education, some also having courses on common law and on social economy.

Partly as a development from these schools have come the special courses of lectures for farmers' wives, dealing with hygiene, sanitation, and the education of children, as well as the organization known as the Union of Farmers' Wives in Belgium. M. de Vuyst has published various articles and books on social and economic subjects and practical agriculture. One of the best known is his book on Woman's Place in Rural Economy. (Le rôle social de la Fermiere. Blackie & Son, London.)

Brussels, Dec. 15, 1918.
22 Avenue de l'Yser.

Dear Sir:

Please excuse me for writing you in French. On account of the German occupation we have read no English publications for four and a half years. At last we are delivered from this oppression. What gratitude we owe America for having preserved us from hunger and for having assisted in bringing about the triumph of justice! New bonds of sympathy between both countries will result.

Please let us hear from you, and when you are ready to visit Europe we shall be most happy to receive you.

My son has fought valiantly and has been wounded several times. We have not yet seen him as he is still in the hospital but he will return to us soon. Our daughters have grown. They have continued their studies and soon they will go to one of the allied countries to study the language and institutions.

One now thinks of the reconstruction, economic, industrial, and financial, of the countries so sorely tried. This is urgent but there is a matter of still greater importance.

Enclosed is a little pamphlet which I have published under the pseudonym, "A. Leconsier." You will find therein some reasonable ideas, a summary of which you might publish in the American papers.

Our League for the Education of the Family has decided to establish an Institute for the Education of the Family as a memorial to lasting peace and as the beginning of a new era of great world progress. This Institute will devote itself to the study and the popularization of the best methods of education in the family, and to the publication of documents.

We speak particularly of the moral education,—the education of character. America, like Belgium, places high moral education above all other progress. We feel therefore that if, through the press, you could focus public attention upon the importance of creating a similar Institute, generous contributions would be forthcoming, for there has always been generous support for a multitude of institutions for advancing the various sciences, arts, and industries; so it seems only logical that we should find support for the advancement of the most beautiful, the most important of arts,—the art by which parents may improve future generations.

In attaching too much importance to the economic interests, certain opposition may arise against us, since the effort to attain the highest degree of moral perfection necessarily uses pacific methods.

Our League for the Education of the Family has been established for twenty years. It has been the imitator of the Great International Congress for the Education of the Family of which the President of the permanent Commission is H. R. H., the Duchess of Verdun, sister to the King of Belgium.

The fourth Congress should have convened in September, 1914, under Mr. Wilson, the illustrious president of your noble country. This congress was postponed because of the war, but we trust it will be called in a year or two.

While waiting, we hope, thanks to American generosity, that the Institute completed may be realized. I venture to hope that you will make the necessary propaganda.

Accept, dear sir, the assurance of my repeated good wishes.

PAUL DE VUYST,
Directeur general au Ministere de l'Agriculture.

THE QUESTION BOX

Question: What change in flour does bleaching make? Does it change the quality or wholesomeness of the flour? Does any law exist in regard to it?

Answer: Flour bleached by nitrogen peroxide is an adulteration product according to the decision of the Secretary of Agriculture and the Board of Food and Drug Inspection, following the public hearing held November 18–23, 1908. "The character of the adulteration is such that no statement upon the label will bring bleached flour within the law (Food and Drug Act of June 30, 1906)."—Westervelt's Pure Food and Drug Laws, 1912, p. 100.

The nitrogen peroxide which has been extensively used in bleaching flour destroys almost immediately the yellow color which is associated with the fat. It also forms with the moisture of the flour nitrous and nitric acid. Bleaching, furthermore, diminishes the iodine number of the fat and affects the quality of the gluten. Studies dealing with the digestibility of the constituents of wheat flour which has been bleached by nitrogen peroxide have given contradictory results. Artificial digestion experiments with gluten from bleached and unbleached flour indicate that the bleached product digested in less time than the unbleached. But according to one investigator the yeast bread from bleached flour did not differ in digestibility from bread made with unbleached flour. The nitrite reacting material apparently disappeared before the bread was removed from the oven. Another investigator reports that, although the difference in digestibility of bread from the two flours, bleached and unbleached, was less marked than in the case of the flours, yet similar variations were observed. Rats and guinea pigs, fed bleached flour, over long periods, in addition to a general diet, apparently grew normally. On the other hand, alcoholic and aqueous extracts from the bleached flour caused death in rabbits in a few hours, the extract from the over-bleached flour being even more drastic in action.

Ladd, E. F. and Bassett, H. P.: Bleaching of Flour. *Jour. Biol. Chem.*, 6 (1909), p. 75.

Rockwood, E. W.: The Effects of Bleaching upon the Digestibility of Flour. *Jour. Biol. Chem.*, 8 (1910), p. 327.

Ladd, E. F., and White, H. L.: Effect of Bleached Flour Extracts on Rabbits. *North Dakota Station Special Bulletin 9.*

Wesener, J. A., and Teller, G. L.: Flour Bleaching, its Relation to Bread Production and Nutrition. *Jour. Indus. and Engin. Chem.*, 1 (1909), p. 700.

Leach, A. E.: Food Inspection and Analysis, New York, 1913.

Question: Is there any truth in the popular belief regarding the "poison" in orange peeling? If so, to what is this due? Have the peelings any food value?

Answer: Persons who are much exposed to inhalations of the oil of bitter oranges are apt to be affected with cutaneous eruptions and various nervous disorders, headaches, gastralgia, want of sleep and even muscular spasms. Violent colic, convulsions, and even death have been caused in children by eating large quantities of the rind. The toxic principle is apparently the glucoside hesperidin, $C_{22}H_{26}O_{12}$. The orange rind has very little food value. It is used principally for its essential oil and color in the preparation of extracts, and for the pectin which it contains. Recent investigations by Hess and Unger have shown that the rind has anti-scorbutic properties. Watery decoctions of orange peel were found to be effective in curing scurvy in guinea pigs.

The Dispensatory of the United States of America, 20th ed., p. 211.
Hess, A. F., and Unger, L. J.: *Proc. Soc. Exp. Biol. and Med.*, 15 (1918), p. 141.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24,1912

Of THE JOURNAL OF HOME ECONOMICS published monthly at Baltimore, Maryland, for April 1, 1919.

State of Maryland } ss.
City of Baltimore }

Before me, a notary public in and for the State and City aforesaid, personally appeared Keturah E. Baldwin, who, having been duly sworn according to law, deposes and says that she is the Business Editor of the JOURNAL OF HOME ECONOMICS and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: American Home Economics Association, Baltimore, Maryland.
Editor: Mrs. Alice P. Norton, Baltimore, Maryland.
Business Editor: Keturah E. Baldwin, Baltimore, Maryland.
Business Managers: None.

2. That the owners are: American Home Economics Association, 1211 Cathedral St., Baltimore, Md.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

KETURAH E. BALDWIN,
Business Editor.

Sworn to and subscribed before me this 31st day of March, 1919.

[SEAL] EDW. W. BAKER,
(My commission expires May, 1919.)

BOOKS AND LITERATURE

Housewifery. By L. Ray Balderston. Philadelphia: J. B. Lippincott Company, 1919, pp. 353. $2.00. By mail of the Journal, $2.15.

In this volume of Lippincott's Home Manual Series entitled Housewifery, Miss Balderston has gathered together and organized a great deal of valuable material on housewifery which she defines in the opening paragraph "as the business of the mistress of the family."

The first chapter of the book has many good general suggestions on the organization of the house and household, stressing especially the need and importance of good planning.

The chapters on Plumbing, Heating, and Lighting cover, very fully for a short treatise, the care of refuse, heating and cooking apparatus, fuels, and illuminants.

The last chapter on Suggestions for Teachers will prove extremely valuable to everyone who is presenting a course in housewifery, no matter to what type of people or under what conditions. It is full of suggestions for all who deal with the subject—whether as a part of some other course or as a course by itself.

The rest of the book deals with the standards of choice for household furnishings, supplies, and equipment, and gives specific and clear directions for the care of the house and its furnishings.

This volume, like the rest of this series, has an excellent bibliography after each chapter. It is freely and well illustrated.

It is adapted for use as a textbook for college and normal students, and for special classes of older students. It will be an excellent reference book for other groups of home ecomonics students and will be of great help in answering many of the questions which confront every housekeeper.

Sarah J. MacLeod,
Pratt Institute.

Economy in Food. By Mabel Thacher Wellman. Boston: Little, Brown and Company, 1918, pp. 36. $0.30. By mail of the Journal, $0.35.

This little book of Miss Wellman's, though written during the war time, was so wisely conceived that it is as valuable now as then. Nearly all the suggestions are as practical today as before the war closed. It contains suggestions on economy in buying, economy in storing food, economy in serving, economy in planning meals, economy in recipes, economy in fuels. There are a few pages of typical recipes.

The most valuable part of the book, however, is the table of comparative costs of 100-calorie portions. By an ingenious scheme, the table is made of permanent value. The cost for the 100-calorie portions is calculated on the prices of 1916 and 1917, but a factor is given that, multiplied by any price, will give the cost of 100 calories of the food purchased at that price. For example, the factor for bread is 0.085, and the cost of a 100 calorie portion of white bread at five cents a pound is given as $0.0043, or 0.085 × 0.05. If the price is eight cents a pound, multiplying the factor 0.085 by 0.08 will give 0.0068, the cost of the 100-calorie portion of bread when the price is eight cents.

Alice P. Norton.

The Life of Ellen H. Richards. By Caroline L. Hunt. Boston: Whitcomb and Barrows, 1918, pp. 330. Conservation Edition. $1.25. By mail of the Journal, $1.35.

Many of us have read over and over again the satisfying life of the woman to whom for so long we looked for inspiration and help. We have asked our students to read it and have put it into the hands of young people as a record of a remarkable life, whose value and effectiveness was set out in a remarkable

way by Miss Hunt. We welcome this new edition, now that the first edition is exhausted, and are grateful to the publishers for offering it for so low a price. We have been reminded again and again of Mrs. Richards during the days of the war and during these times when home economics has been able to aid in the solution of so many problems. We have been sure that she would rejoice in the opportunities offered. We have wished for her wise advice to help us make the most of such opportunities. As we read again this record of her work, we are impressed anew by her almost prophetic vision, and by the many ways in which she was ahead of her times. "We are trying to save the resources of our country by showing how cheap food may be good food," was written, not in 1918, but by Mrs. Richards in 1885.

This new edition of her life should have an even larger circulation than did the former.

ALICE P. NORTON.

Food Saving and Food Sharing. By EVA MARCH TAPPAN and Others. New York: Doubleday, Page and Company, 1918, pp. 102. $0.24. By mail of the Journal, $0.30.

This little book was written under the direction of the United States Food Administration in coöperation with the Department of Agriculture. Miss Tappan was assisted by Mrs. Norton, editor of the JOURNAL OF HOME ECONOMICS; Henrietta W. Calvin, Specialist in Home Economics, Bureau of Education; C. F. Langworthy, Chief of the Office of Home Economics, Department of Agriculture; and Sarah Louise Arnold, Dean of Simmons College. This book was also approved by H. C. Sherman of Columbia University.

With this authorship it goes without saying that the book is a mine of correct information. It is written for use with children to present the facts of nutrition simply and interestingly, and to show why food saving and sharing are necessary now as well as during the war.

The make-up of the book is excellent. It is simply bound, with the Food Administration seal on the cover and is attractively illustrated. In fact it is the kind of book that the child will carry home and the older people will pick up and read, so that its message will reach more than the child.

After an introductory chapter, the next six chapters are devoted to the development of the idea of children going to an immense world food fair in which the appropriate foods are grouped into booths according to the part that those foods play in body nutrition. The idea is a clever one, probably taken from the arrangement at the Chicago Food Show during the Conservation period, in which the effectiveness of this grouping was well proved. The following chapters tell why Europe is hungry, where the food of the world is, what we did about it during the war and what we must still do. The final chapter brings the lesson of saving home to the child.

The selection of material is excellent and the facts are interestingly presented. A summary of points worth remembering at the end of each chapter makes the message all the clearer. One wonders, however, if the book is intentionally addressed now to older, now to younger children. There seems to be some unevenness in the writing. It is to be regretted that there is not a whole chapter on cost, instead of having that side of the subject tucked into the chapter on Fats. Some parents may think that, in the chapter on Hungry Europe, the book comes too near teaching hate of the enemy in such sentences as "the Germans set to work deliberately to do as much harm as possible." "Everyone knows . . . how they (the Germans) murdered and tortured and looted and destroyed," etc.

The elementary teacher should welcome this book with joy, for nowhere else will she find this material stated in language suited to young children, and much of the material is of permanent value in the teaching of food work. The ridiculously low price of the book will make it available everywhere.

MABEL T. WELLMAN,
Indiana University.

NEWS FROM THE FIELD

The New England Home Economics Association. The December meeting was held at Simmons College. The general topic was "The Message of the Hour," and the speakers were Mrs. Nathaniel Thayer, Chairman of the Women's Committee of the Council of National Defense, Massachusetts Division; Martha Van Rensselaer, U. S. Food Administration. The latter said "Our program is one of Thrift; to waste is wrong and uneconomic." "Home Economics leaders and teachers must get the community idea because citizenship is only an extension of our home ideas." Mrs. Thayer urged the holding together, in the same spirit that was maintained throughout the war, to do whatever presented itself. "Americanization is one of the greatest and most vital problems in this country."

The January meeting also held at Simmons College, presented a program of Thrift. "The Budget for the Individual" was discussed by S. Agnes Donham of the Garland School of Homemaking, and "Thrift in the Household as a part of the National Savings Campaign of 1919," by S. Maria Elliott, Assistant Professor of Household Economics, Simmons College. Miss Elliott gave a report of the conference at Washington, and indicated lines of action for the teacher and homemaker.

The February meeting was devoted to child welfare. "Child Welfare and the Work of the Children's Bureau" was presented by Dr. Dorothy Reed Mendenhall, Children's Bureau, U. S. Department of Labor; and "Existing Agencies for Child Conservation Work in Massachusetts" by Dr. Merrill E. Champion, Director of the Division of Hygiene, State Department of Health.

At the March meeting the household budget was discussed by Miss Donham, as a continuation of her series; and Dr. Frederic W. Howe, of the Framingham Normal School, led a general discussion of problems of interest to home economics teachers of today.

The officers of the association are: President, Mrs. Schuyler F. Herron, 383 Harvard St., Cambridge, Mass.; Corresponding Secretary, Mrs. R. Harold Brown, 266 Brookline Ave., Boston, Mass.; Recording Secretary, Helen E. Lockwood, Simmons College, Boston, Mass.; Treasurer, Alice W. Clement, 275 Warren St., Roxbury, Mass.; Councilor, Laura Comstock, Amherst, Mass.

The Yonkers Home Economics Association has had as speakers, at its monthly meetings, Commissioner Dillon, Mayor Wallin, Dr. Waldron of the Bureau of Child Hygiene, Mrs. Owen Kildare, Mrs. V. Everit Macy, and Miss Cora Winchell. Dr. Benjamin R. Andrews spoke at a public meeting held with the Chamber of Commerce. The association published two food bulletins, held a series of weekly conferences for housewives, and gave demonstrations in canning and drying, fireless cookery, and conservation of clothing. The past year shows a steady growth of membership from ten to one hundred and fifty. Mrs. Jacob Emery is the newly elected chairman.

The American Dietetic Association. At a meeting of the Executive Committee, January 22, 1919, it was decided to accept the invitation of the American Hospital Association to hold the next annual meeting with them in Cincinnati, September 8–12, 1919.

Persons eligible to active membership are: Graduates of at least a two year course in home economics, from a recognized school; graduates of a one year course in home economics (prior to June 1917), who, following

graduation have had one year of successful experience in dietetic work; research workers who have contributed to the advancement of dietetics; practising physicians in good standing; and persons whose special work is allied with dietetics.

The annual dues are $2.00. Application for membership should be made to the secretary, Miss E. M. Geraghty, New Haven Hospital, New Haven, Conn.

The New York Association of Dietitians held their Annual Meeting in February in the Nurses Training School Hall, New York Post Graduate Hospital.

Among many items discussed during the year were the following: Courses for Pupil Dietitians, Courses in Dietetics for Nurses, Canteen Work, Food Problems in Russia, New Text Books, New Ideas in Institutional Equipment.

The membership for the year showed an increase from fifty-two to seventy, including an honor roll of seventeen, eleven of whom have seen foreign service. Those elected to honorary membership are: Miss Isabel Ely Lord, Miss Emma Gunther, Miss Adelaide Nutting, and Mrs. Mary S. Rose.

The new officers for the coming year are: President, Eleanor Wells, Teachers College; Corresponding Secretary, Charlotte Addison, New York Post Graduate Hospital; Recording Secretary, Alice Penrose, Central Branch, Y. W. C. A.

The Home Economics Department of the University of South Dakota improved its great opportunity to help during the war, each member giving most willingly of her time and energy.

Professor Eva R. Robinson, who became Mrs. N. E. Dawes on February 14, was made Director of Home Economics for South Dakota by the Food Administration, and gave much time to the work of Food Conservation. A small bulletin of Food Conservation Dishes was prepared immediately, and later, with the help of Miss Ruetta Day, the Timely Cook Book was published.

When the S. A. T. C. was organized in the University, before the new barracks were ready, the food laboratory was turned into a cafeteria, and Miss Robinson and Miss Day, assisted by some town ladies, served meals to 80 men for 10 days. They then organized and conducted the barracks kitchen for three weeks, feeding about 200 a day. During the epidemic of influenza, meals were sent from the department until the hospital kitchens were equipped and the Red Cross helpers were organized into working squads.

In the clothing department Miss Mae Wilson designed the famous S. D. University comfort kit, and over 250 of these were made, either by students of the department or through Miss Wilson's efforts. The sewing classes under Mrs. Edith Abell made 100 money belts, 40 hospital bed shirts, 60 suits of pajamas and 50 hospital bags. Mrs. Abell also conducted classes in knitting, and gave instruction in the surgical dressings in the Red Cross room.

The Home Economics Section of the Indiana State Teachers Association has been organized for several years, but not until April, 1917, were plans perfected for a definite and active organization.

The committee on membership and organization drafted a constitution and by-laws which were unanimously adopted at the regular business meeting in October, 1917. A membership drive resulted in seventy paid up active members.

The Executive Committee secured the services of Mrs. Henrietta Calvin from the Bureau of Education, Washington, D. C., to address the Section at the annual meeting in October, 1918. The regular 1918 meeting of the State Teachers Association was postponed and later cancelled, due to the epidemic of influenza.

The Home Economics Section especially has suffered on account of this irregularity because plans were being developed which would greatly strengthen the Section and extend its influence.

The Institution Economics Section of the American Home Economics Association will meet at the University of Wisconsin, Madison, June 9–13.

Madison is beautifully located in a lake country, and will afford opportunity for enjoying the afternoons which are left open for conferences, boat rides, drives, and tramps.

The forenoons and evenings will be devoted to the program which includes papers and discussions on the following subjects: Courses of Study for Institutional Economics; Dormitory Administration with Emphasis on All Phases of the Work; Cafeteria Management in Both the College and Commercial Worlds, with Special Emphasis on Marketing and Organization; School Lunch Problems; Restaurant and Coffee-Shop Management; Hospital Administration; New Phases of Institution Work, such as Supervising Housekeepers in Wealthy Homes and Camp Directors.

The program will be conducted by administrators and teachers in colleges and schools, by dietitians, and by others actively engaged in the business world. It is expected that there will be some exhibits of institutional furnishings and equipment.

For program and particulars as to accommodations, address Miss Elsie P. Leonard, Chairman, Chadbourne Hall, Madison, Wis.

The Institution Economics Section will also present a program at the Annual Meeting of the A. H. E. A.

The National Conference of Social Work meets at Atlantic City June 1 to 8, and much of its program should prove of distinct value to the home economics worker. The Social Work Committee of the American Home Economics Association is hoping to arrange several informal discussions of problems of social work in home economics. Home economics workers who are planning to attend the Conference are urged to write the Chairman of the Social Work Committee, Miss Emma A. Winslow, 105 East 22nd Street, New York City, or to get in touch with her at the Conference.

Copies of the Conference program may be obtained from Mr. William T. Cross, Secretary, 315 Plymouth Court, Chicago.

Practice in Homemaking Adjustments. The Committee on Home Economics of the New York Charity Organization Society is offering to a limited group of women, trained in home economics, the opportunity of doing practice work in the adjustment of various types of homemaking problems. A special course is to be given under the direction of the Committee from June 9 to July 5 of this year, and Teachers College, Columbia University, has already arranged to give both graduate and undergraduate credit for the course, the amount varying according to the quality and amount of the student's work as indicated by the reports of the supervisors and the student's diary record of work performed.

Four days a week are to be spent in carefully planned field work with one of a group of specially selected social agencies in New York City. One day a week is to be used for lectures, discussions, and visits to institutions and social agencies doing work of immediate interest in connection with home economics; and one-half day a week for round table discussions of field work experiences.

Membership in the group is open to college juniors as well as graduates. No fees are to be charged for the training to be given. The size of the group is to be limited to twenty-five, and effort will be made to select members who will represent a variety of colleges and a variety of previous experiences, and who will probably derive the maximum benefit from their field work.

Miss Emma Winslow is to have charge of the work of the group under the direction of a special Sub-committee of the Committee on Home Economics, consisting of Miss Cora M. Winchell of Teachers College, Chairman, Dr. Mary Swartz Rose of Teachers College, Miss Isabel Ely Lord and Miss Jessie A. Long of Pratt Institute, Mr. Porter R. Lee of the New York School of Philanthropy, and Miss J. C. Colcord of the New York Charity Organization Society. Further information concerning the plans for the course may be secured from Miss Winslow or from any member of the Sub-committee.

BLUE RIDGE, NORTH CAROLINA

You are on your way to the **Twelfth Annual Meeting of the American Home Economics Association, June 23 to 28, 1919.** The long train noses its way between the rounded green peaks of the Blue Ridge mountains and comes to a stop as the porter calls: "All out for Black Mountain." The taxicab drivers deafen you with their insistent: "Fifty cents to Blue Ridge. Take your suitcases." A little scattered village lies about the station. Half a mile to the east begins a long steep slope of solid green, broken half way up the mountain side by the clear white outline of a big comfortable-looking building, Robert E. Lee Hall, which marks your destination.

The last part of the drive brings you under the trees and along the banks of rhododendron that make Blue Ridge a paradise of beauty in June. Then you come out into the open grounds about the buildings, where you may view the sweep of the valley below and peak after peak of blue mountain beyond. You register, and are led away to a cottage clinging to the mountain side above, or snuggled away by the stream below the main buildings. If your reservation was late you may have to take a less romantic and slightly more expensive room in Robert E. Lee Hall.

The plant belongs to the Blue Ridge Association, and is operated primarily for the Y. M. and Y. W. C. A. The student conference this year closes June 22; consequently not many rooms will be available before Monday, June 23. By all means plan to stay the entire week, and longer, if possible. The rate is $12.00 to $15.00 per week for room and board. Most rooms accommodate two, but single rooms may be had. The Blue Ridge Association aims simply to pay expenses, not to make a profit.

The cottages have 4 to 8 rooms, a sleeping porch, and one or two bath rooms with hot and cold water. One may sleep indoors or on the porch,—it is delightfully cool everywhere. The cot beds are comfortable; all furnishings are very simple. One should plan for much out of doors tramping and driving, and bring clothing suitable for the mountain trails.

Delightful drives may be arranged for without exorbitant charge. Biltmore and Asheville are about twenty miles away, Hendersonville, Chimney Rock, and other famous spots in the "Land of the Sky" are farther, but within driving distance. Montreat and Ridgecrest, headquarters, respectively, of Presbyterian and Baptist conferences, are each about six miles away.

The Southern Home Economics Association is to have separate programs on Tuesday and Thursday evenings; at other times it will make itself a part of the American Association. The Southern Association extends a most sincere welcome to the American Association and particularly to those members who have not before been in the South.

The full program of the meetings, including the section meetings, will be sent as soon as possible to all members of the A. H. E. A. The Extension Section has planned programs for June 26 and 27, and the other Sections will arrange theirs later.

Reservation should be made not later than June 10, if possible, to the Blue Ridge Association, Blue Ridge, N. C. They should specify Cottage or Hall. Groups desiring to be together in cottages should specify this clearly in making reservations. Mail and telegrams should be sent to Blue Ridge, but railroad tickets read to Black Mountain. Be sure to ask for tourist rates, as whatever rates are available for summer resorts will apply.